Unclassified SECUPATY CLASSIFICATION OF THIS PAGE	AD-A2	276 90	1		
					. [4]
1a. REPORT SECURITY CLASSIFICATION	神動性	name avrin with owner 1784 1581	IGS		
Unclassified 2a. SECURITY CLASSIFICATION AUTHORITY		3 DISTRIBUTION	AVAILABILITY OF	REPORT	
N/A 2b. DECLASSIFICATION / DOWNGRADING SCHEDULE			n Statement stribution		ved for public
N/A	DE B/C\				
4 PERFORMING ORGANIZATION REPORT NUMBER(S) NDU-ICAF-93- (& 4		5. MONITORING ORGANIZATION REPORT NUMBER(S) Same			
6a. NAME OF PERFORMING ORGANIZATION	6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MO	NITORING ORGAN	IZATION	
Industrial College of the Armed Forces	ICAF-FAP	National D	efense Unive	ersity	
6c. ADDRESS (City, State, and ZIP Code) Fort Lesley J. McNair			y J. McNair		
Washington, D.C. 20319-6000		wasnington	, D.C. 203	19-6000	
8a. NAME OF FUNDING/SPONSORING ORGANIZATION	8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT	INSTRUMENT IDE	NTIFICATION	NUMBER
8c. ADDRESS (City, State, and ZIP Code)	_!	10. SOURCE OF F	UNDING NUMBERS	· · · · · · · · · · · · · · · · · · ·	
		PROGRAM ELEMENT NO.	PROJECT NO.	TASK NO.	WORK UNIT ACCESSION NO.
11. TITLE (Include Security Classification) Rec air Joseph 4950th Jest w Dre aningational Reclasion	lesigning Organization	ance Comp	2: A Casi lix Jotal	Studi Qualit	of the gased
12. PERSONAL AUTHOR(S) Richard	S. Hassan				
13a. TYPE OF REPORT 13b. TIME	COVERED	14. DATE OF REPOR	RT (Year, Month, D	(ay) 15. PA	GE COUNT 3 3
Research FROM A 16. SUPPLEMENTARY NOTATION	ug 92 то <u>Арг 93</u>	April 199	3		
17. COSATI CODES 18. SUBJECT TERMS (ontinue on reverse	if necessary and	identify by t	olock number)
FIELD GROUP SUB-GROUP	_				
19. ABSTRACT (Continue on reverse if necessar	y and identify by block n	umber)			
SEE ATTACHED	ELECTE 1994				
	MAR 15 1994				
			DTIC Q		es ogg o 1
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT		21. ABSTRACT SEC Unclassifie	CURITY CLASSIFICA	TION	
Z2a. NAME OF RESPONSIBLE INDIVIDUAL	RPT. DTIC USERS	22b. TELEPHONE (I	nclude Area Code)		
Judy Clark DD FORM 1473, 84 MAR 83	APR edition may be used un	(202) 475–1	007	ICAF-FA	r

ABSTRACT

This research focuses on both a review of literature concerning the theory of Total Quality Management (TQM) principles, and how TQM principles were utilized to implement a redesign of the 4950th Test Wing Maintenance Complex at Wright-Patterson AFB, Ohio.

The research attempts to answer several questions regarding the imperative to infuse TQM principles into the Department of Defense (DoD), the definition of a TQM framework, the redesign effort at the 4950th TW, lessons learned from the 4950th TW and the potential application across DoD.

The 4950th Maintenance Complex is part of a Total Quality revolution at the Air Force Material Command's Aeronautical Systems Center. They developed a radically redesigned organizational structure that is centered on an environment of trust, teamwork and measured risk-taking. Their ambitious innovation replaced the 3-squadron maintenance complex with a streamlined single squadron organization, removing unnecessary layers of supervision and resulting in a leaner unit, requiring only 80 percent of the previous manpower authorizations.

The research traces the process the 4950th followed to attain this model 21st century organization. The research closes with recommended managerial actions for senior DoD leadership to further increase participation of the armed services and defense agencies in the use of TQM principles.

1993 Executive Research Project CS4

Redesigning Organizations: A
Case Study of the Air Force
4950th Test Wing Maintenance
Complex Total Quality-Based
Organizational Redesign

Lieutenant Colonel Richard S. Hassan U.S. Air Force

Faculty Research Advisor
Dr. Rita Wells





The Industrial College of the Armed Forces
National Defense University
Fort McNair, Washington, D.C. 20319-6000

1993 Executive Research Project CS4

Redesigning Organizations: A
Case Study of the Air Force
4950th Test Wing Maintenance
Complex Total Quality-Based
Organizational Redesign

Lieutenant Colonel Richard S. Hassan U.S. Air Force

Faculty Research Advisor
Dr. Rita Wells



The Industrial College of the Armed Forces
National Defense University
Fort McNair, Washington, D.C. 20319-6000

DISCLAIMER

This research report represents the views of the author and does not necessarily reflect the official opinion of the Industrial College of the Armed Forces, the National Defense University, or the Department of Defense.

This document is the property of the United States Government and is not to be reproduced in whole or in part for distribution outside the federal executive branch without permission of the Director of Research and Publications, Industrial College of the Armed Forces, Fort Lesley J. McNair, Washington, D.C. 20319-6000.

Access1	on For	
NTIS G	RA&I	3
DT10 %		
Unerwier		
Jastie	.00 - 1 on_	
a Aveil	edility	Spring 8
H	tell au	
Dist.	Specia	1
1. 1.	1	
	1	
15 11	i	

Redesigning Organizations: A Case Study of the Air Force 4950th Test Wing Maintenance Complex Total Quality-Based Organizational Redesign

b v

Lieutenant Colonel Richard S. Hassan, USAF

INTRODUCTION

Take it from the top one more time

The senior leadership in the Department of Defense (DoD) must not let the momentum that is moving leaders to implement Total Quality Management (TQM) principles, however slight that momentum may be perceived, shift back to management "the way it always was."

The idea that people on the frontline, doing the work are probably the right people to recommend how to do the work better is hard to dispute. In Reframing Organizations, Bolman and Deal point out that these same people look to organizations to satisfy many needs and that they fundamentally have basic desires such as respect, appreciation, and being listened to. (1:130-131) Unfortunately, military organizations have not been attuned to supporting either of these philosophies.

Despite these basic "people-oriented" tenets, and the call of then Secretary of Defense. Frank Carlucci, to use TQM to incorporate continuous improvement into all activities of the military departments and the defense industry, TQM implementation in the DoD is now seemingly at a standstill! (5)

What's in a name?

TQM, Total Quality Leadership, Q+. Teamwork--there are many different names given to the theme of management change today. Further complicating this name-game is the fact that numerous management concepts including Management by Objective and Zero-Defects rose rapidly in popularity and then were set aside due to their long-term ineffectiveness. The point is that the term used should not be the issue: however, far too often the term is the issue. Why? As Herbert Clark points out, modern managers are like compulsive dieters, trying the craze for a few days and then moving on. (6:9) The military has had its share of "compulsive diets," so naturally when TQM was introduced, many skeptics vocalized their doubts that TQM was significantly different from other miracle cure management methods.

Instead of distractions over terminology and previous "quick fix" management programs. DoD needs to focus on the concepts of TQM. TQM is a framework, a guide, an overarching set of principles to follow--not another program to implement, or even a management method. As Walter and Roger Breisch say, "Total quality management is a system. It can, and should, be studied and understood as a system..." (3:49)

The distinction between TQM as a framework and not just another acronym is important because it is too easy to call TQM another "buzzword". It is too easy to say "we've always used these management tools." It is too easy to say "sure we can always do a little better, but we produce when we have to." In "What's Wrong with Total Quality Management," Boyett and Conn illustrate this point: "Total Quality Management when implemented properly isn't a fad but is a

totally new way of running a business that is essential for survival in this very tough business climate." (2:11)

To many who do understand the implications, implementing TQM is perceived as being too hard. The task of changing a culture, of really empowering employees to make decisions, and of prying the overbearing manager out of his comfort zone is surely a challenge. General Mike Loh, Commander of the Air Force Air Combat Command believes, "it isn't easy to change the way you do business. Organizational inertia works against it. This is particularly true in the armed forces." (13)

The questions

This research will focus on both the theory of TQM principles from various literature sources and how TQM was implemented in the 4950th Test Wing (TW) Maintenance Complex. To do so, the research will address the following questions:

- What is the imperative to continue to pursue the infusion of TQM into our DoD culture?
 - What is this TOM framework?
- What is the 4950th Test Wing maintenance complex and what is so great about what they did?
- What lessons learned from this experience can be applied elsewhere in the Air Force or DoD?

WHY ALL THE FUSS ABOUT IMPLEMENTING TQM?

Dynamic changes

DoD is undergoing profound change, both external and internal. On the outside, smoldering international disputes and ethnic hatred abound. Demands for United Nations intervention, with United States leadership are growing exponentially. A new world order could easily be labeled "a new world disorder," placing new missions and burdens on DoD.

Internally, the manpower drawdown, the force structure changes, and the roles and functions re-evaluation of each Service all put pressure on the organizational framework and morale of the workforce. In turn, the changes already experienced in DoD affect the national strategy because they are viewed in the broader context of changes in the national economy and political climate.

So what is the real issue?

The basic problem appears to be this: the many issues leaders in DoD face are too complex for one person at the top of any organization to solve. There are many interested, dedicated and patriotic people who want to be involved in the decision-making process to help address the almost overwhelming confluence of change occurring today. People are our most valuable resource and their creativity will be wasted if the role of leadership doesn't change from giving suboptimal solutions to empowering others to solve problems.

In a recent article. Tom Salemme writes, "People and organizations change either out of inspiration or desperation." (15:22) One could believe the above list of

changes is driving DoD to the desperation mode. There certainly are elements of DoD where the stage of desperation is sufficient motivation for change.

There are also opportunities for inspiration to be the guide in DoD, brought about by leaders who can "recognize the symbolic significance of their behavior and be committed to act in conjunction with TQM values." (15:24)

WHAT IS THIS TQM FRAMEWORK?

The strategic elements of continuous improvement

TQM is both a philosophy and a set of guiding principles that represent the foundation for a continuously improving organization. The beauty of viewing TQM as a framework is it allows the choice of the continuous improvement system to depend on the specific needs of the organization. The various systems, of which there are many, popularized by the perennial gurus of TQM--Deming. Juran and Crosby, can be summarized under a number of different headings such as Quality Circles, Just-in-Time, Customer-Driven, Interactive Planning, etc. (10:Ch3)

What is continuous improvement? Deming defines it as a system where all processes in any chain are subject to a never-ending search for improvement. "The object is to increase customer satisfaction and to avoid waste in employee time and material which can account for as much as 40 percent of the product cost." (18:59)

There are four major attributes essential to building a TQM framework, an infrastructure of total quality management to address change--and have a

lasting effect. They are motivational or inspirational leadership, involvement, empowerment and commitment.

How can I be in two places at once when I'm really nowhere at all?

"The world of most managers and administrators is a world of complexity.

ambiguity, value dilemmas, political pressures, and multiple constituencies."

(1:38) The job is tough, but a leader must define and cultivate a vision and provide the means to allow the people to strive for the vision. It is the leader's role to harness the social forces in the organization and to understand and guide the values. It is not the leader's role to control and accomplish all the work processes. Attempting to do so, the leader is really nowhere at all.

General Mike Loh feels. "Leadership is the art of inspiring others to achieve extraordinary goals and levels of performance. Leadership creates trust which leads to teamwork and the ability to work towards continuous improvement together." He goes on to say. "The remarkable thing about achieving quality, is that regardless of our industry of affiliation, we go about doing it the same way-through leadership." (13)

The old school of adversarial management epitomized by a popular poster which says. "The floggings will continue until morale improves." will not cut it today. What is necessary is visionary leadership as characterized by Major Mary Solis when she wrote:

The visionary is an innovator who believes in people and progress. He is a leader of action and great purpose. His ability to direct people toward a goal, is outweighed only by his ability to identify that common

purpose....The visionary's goal is to unite followers and gain commitment to common goals....The visionary leader is more effective than other types of leaders because he cares foremost about his people, is committed to quality, keeps in touch with the organization, and has the wisdom and courage to make the right decisions.... (16:6)

Engage others in solving your problems

Today, leaders are challenged with people who not only realize they are affected by decisions but also want to make decisions. Here, the inspirational leader could take some guidance from Chairman Mao Dze Tung.

We should never pretend to know what we don't know, we should not feel afraid to ask and learn from people below, and we should listen carefully to the views of the cadres at the lower levels. Be a pupil before you become a teacher; learn from the cadres at the lower levels before you issue orders. (12:238)

Employee involvement gives members a chance to participate in continuous improvement and to bring energy, enthusiasm and creativity to the process. The article, The Demystification of Leadership points out that "people are spontaneously energetic with respect to things that interest them." (11:69)

Past practices that sought to simply reward individuals through monetary means or through antiquated systems of promotion, such as, whoever is next in line by seniority gets the job, no longer motivate the workforce or serve the process improvement needs of organizations. Jacques, Elliott and Clement agree: "....put away incentives, bonuses, and other pigeon theory conditioning approaches, and

get on with ensuring the conditions for effective managers to recognize good work, encourage it....and provide managerial leadership that lets everyone get on with their work." (11:71)

Real worker involvement happens when people are included in decision-making for those activities they control and understand the strategic needs of the organization as a whole. What is needed is empowerment.

The more control you give up--the more influential power you get

Of all the TQM terminology, the concept of empowerment is the least understood.

Simply, empowerment is trusting those employees at the lowest level, the frontline, with decision-making authority that used to reside with the managers.

To truly implement the concept of empowerment is not so easy. According to Jim Heitz, several conditions must exist for this state of the organization to occur:

- Understanding the employees must understand not only the vision the leadership has for the organization but what is expected of them
- Training education and training, education and training, and education and training--not only in job skills but most importantly, problem-solving skills in order to change the way the organizational processes are performed
- Equipping the overall culture of the organization must support risk-taking. recognition must be free flowing, benefits and promotions must reflect those contributing to continuous improvement--all combined with the most appropriate tools to accomplish the tasks

- Authority leaders must have faith, trust and confidence in the workforce and allow the frontline employees to really make decisions without getting prior approval
- Example 1 readers must expect the job gets done right, the first time (7)

The empowerment of employees is critical because human beings have needs that energize their behavior. When the fit between the needs of the organization and the needs of the individual is good, both obviously benefit. (1:179) Empowerment goes a long way toward making this proper fit. So does commitment.

Walk the talk

Tom Salemme summarizes it best, "....the greatest threat to the implementation of TQM is that management's words seldom match their day-to-day actions."

(15:23)

Leaders usually fail to understand the powerful effect their everyday actions have on their employees. How they talk, who they talk to, who they invite to meetings are all strong symbolic effects. Salemme writes, "....leaders should recognize the symbolic significance of their behavior and be committed to act in conjunction with TQM values." (15:24)

Commitment involves a fundamental belief in the tremendous worth of the people and how they can improve an organization. As General Loh writes,

"...people assume that if people in the front office are talking about quality...then quality is taking place...that may be true, but those same people aren't following up with the actions to create the environment....they will never reap the benefits." (13) You can't fake it. When you:

- fail to implement an initiative from the workforce, they notice
- fail to follow through with time for education and training, they notice
- fail to recognize and reward the heroes, they notice
- fail to support decisions made by the frontline troops, they notice
- fail to walk the talk--YOU LOSE

With the principles of leadership, employee involvement, employee empowerment and commitment to follow through with the TQM framework, the leaders for the 90's will guide organizations to greater harmony and productivity.

SO WHAT IS THE 4950TH GROUP AND WHAT DID THEY DO?

The 4950th TW is located at Wright-Patterson Air Force Base (AFB), near Dayton. Ohio. The primary mission is to test and evaluate airborne equipment, such as black boxes and radars, with it's fleet of 36 specially modified research and development aircraft. Four different series of aircraft are available to support this effort: C-141s, C-135s, C-18s and T-39s. The 4950th TW reports to the

Aeronautical Systems Division (now called the Aeronautical Systems Center), one of the Numbered Air Force components of Air Force Systems Command (now called Air Force Materiel Command).

The lay of the land

In 1988 the TQM foundation was begun. The then Vice Commander. Major General John M. Loh, began pouring the concrete. He recognized the need for and initiated the process of cultural change in ASD. His initiative followed at least five of the steps set forth by Deming.

- the leader became committed
- a leadership group within the command evolved
- an experienced TQM educator, reporting to the Commander, was hired
- education was begun
- specific, achievable process improvements were begun (18:60)

Under the guidance of an outside consultant group, the senior leadership cut their teeth on TQM principles. Two leaders that became committed early were the 4950th TW Commander, Colonel Bob Raggio and his Assistant Deputy Commander for Maintenance, Mr Jim Heitz. Both individuals saw the tremendous potential of TQM if applied at the Test Wing.

With the senior leadership commitment in place, the Test Wing began the journey toward a total quality culture change by expending large sums of capital, both human and dollar, on training for the entire wing organization of approximately 2000 people.

Thus the wing began to adopt a philosophy of TQM that was built on a commitment to continuous, measurable improvement, effective teamwork, trust, and absolute attention to customer requirements. (9:iii)

The maintenance complex, which made up roughly one-half of the wing, was extremely receptive to this TQM philosophy. This enthusiasm had its roots in the fundamental nature of maintainers. These workers are generally take-charge, can-do, "whatever it takes to get the job done" types. On the other hand, maintenance organizations historically-tend to be very structured, disciplined and often top-heavy units. So, an opportunity to have more involvement in the decision-making processes was attractive to the majority of the maintenance workers.

Follow the yellow brick road

The investment in training seemed to pay off as the maintenance complex consistently led the wing and ASD in the number of suggestions, called Search For Opportunities (SFOs), from the workforce on how to do the job better. Not only did the organization lead in the number submitted, it led in the number implemented. (7)

But all was not well. Dark clouds loomed on the horizon. Change and lots of it was in the air:

- rumors ran rampant of an impending break-up and move of the 4950th TW from Ohio to Edwards AFB, California
- the defense build-down predicted reduced manpower, funding, and a reduction in the fleet of aircraft from 36 to 26 (or less)
- a tremendous amount of pending significant personnel impacts including a civilian Reduction-in-Force (RIF), enlisted High-Year-of-Tenure adjustments, the merger of Air Force Systems and Logistics Commands, and the Defense Management Review mandates for streamlining

The journey on the road to total quality land became harder to stay on.

Time to put your money where your mouth is

Jim Heitz and his boss, Colonel Mike Knox, the Deputy Commander for Maintenance, along with their six principal division chiefs decided to "walk the talk." Why not utilize the foundation of TQ values and the TQ framework to see if the complex could get out ahead of some of these impending changes. Further, why not redesign their organization--utilizing TQM principles with the help of the employees? The idea of an organizational redesign was a new one, but one that seemed to fit perfectly into the long-term TQM cultural change. As Jim Heitz says, "there is a significant difference between reorganizing and redesigning....reorganizing is like moving the furniture around in a room, leaving the room with the same function....redesigning is not just moving furniture, it's moving the walls, changing the function of the room altogether." (7)

In the summer of 1990, a consultant group, expert in redesigning organizations, was called in to assist the 10-12 key leaders of the maintenance complex in their approach. The Miller Consulting Group from Atlanta, Georgia helped establish the principles of the redesign:

- 1. The Whole System Approach most change efforts are fragmented so the leaders must include the total work system, which includes technical elements (how work is organized), and social and human elements (how people are organized)
- 2. The Design Must Be Built On Principles all organizations reflect values; the leaders must define a set of values and a vision so the design of the technical and social systems conforms to these values
- 3. Quality Results From Commitment & Teamwork world class organizations are built on teams of employees who accept responsibility for continuous improvement, are empowered to make decisions about their own work, and are recognized for their achievement
- 4. Ownership For A Whole Process teams are organized around whole processes, work to which people are committed is organized as a whole process: a quality product results from quality processes
- 5. All Work Must Be Value-Adding unnecessary activities, checks, steps, recycles, redundancies and rework must be eliminated

6. Those On-The-Spot Are The World's Greatest Experts - the employee with his or her hands on the product and process is in the best position to improve the product and the process, employees can redesign their own work systems (8:2-3)

With these six principles agreed to, the structure of both the participants and of the redesign process was established. The participants were assigned clearly defined roles. These included the Steering Committee (comprised of Knox, Heitz and the six division chiefs), the Design Team (a cross-section of mid-level managers representing both functional areas of expertise and teambuilding skills), and managers, employees and customers.

These were the redesign process steps: survey the environment, write the charter, strategy development, select and train the design team, map the current organizational processes, map the ideal organizational state processes, structure human systems design and plan the implementation. (14:4-5)

The guiding principles that were established by the Steering Group, and followed religiously throughout the entire effort were

- safe ground and flight activities
- quality maintenance
- focus on doing the "right things" through process improvement

The real nitty-gritty

From the outset, the steering committee committed to the design team's freedom of action and availability to do the effort. Most important, within the bounds of the effort, the steering committee committed to accept their recommendations. The first actions of the design team included communicating to all employees their desire to let the employees influence the effort and to publish the team's objectives:

- increase cooperation among all
- ensure people know where they fit in
- design for job satisfaction/motivation
- create the most efficient organization
- streamline information flow
- push decision-making down to the lowest level (8:3)

The formal procedure started in the early fall of 1990. A dozen individuals had come together as a team, a redesign team. The first, and most daunting task, was to piece together what it was the organization did and how they did it. Groups and individuals were called to a designated work area where charts began to form around all the walls depicting a general flow for the major process--that of launch and recovery of aircraft.

This part of the procedure was the most lengthy and labor intensive, consuming over two months of almost continuous effort. One of the keys was the involvement of all the workers and the opportunity for them to minutely describe their piece of the overall work effort. As the co-chairperson of the Design Team, Captain Betsy Strines felt, not only did this draw in the frontline people, raising their trust level, but also helped accurately depict an extremely complex maintenance process. (17)

Along the way the steering committee was briefed twice, in the "design center". on the progress of the effort and for feedback, assuring the guidelines were being followed. The design team welcomed this level of involvement. (17)

The second major task for the design team was to identify the inhibitors, delays, and non-value added actions and duplications of effort. To collect data from the source, they developed and distributed surveys to the workers and conducted interviews. The team found that workers from all levels of the organization felt comfortable walking into the design center and physically placing "yellowsticky" pieces of paper on the work flow diagrams where actual or perceived problems existed. This result was predicted by Walter and Roger Breisch when they wrote, "Every employee should be encouraged to know his or her customers (internal or external), clearly identify customer needs, and use the tools of quality to overcome obstacles to meet those ends. People in this environment become more knowledgeable about the company and ...consequently become more interested and committed." (3:49)

At the conclusion of the second phase of the effort, three initial options for redesigning the organization were developed by the design team. The options

had to meet the criteria of developing an organization to fit the processes of the maintenance performed--not shuffling boxes of a preconceived organizational chart and stuffing the maintenance processes into them.

Step four included distribution of the options to the workforce for review. Face-to-face discussions and interviews with various work centers were then held.

After the data collection effort there was a review by the employees, and a fourth option was developed from their input. This part was significant! Trust and confidence in the entire redesign shot up. (7)

Finally, in January of 1991, the design team briefed the steering group.

presenting the options and the group's recommendation for acceptance. This briefing also included the following recommendations:

- to develop an implementation plan
- to reorganize the complex within six months (by Jun 91)
- to evaluate the new structure and make corrections as necessary in two six month increments (Jan 92 and Jun 92) (8:16)

Hey, everybody has problems

The results of the redesign effort were remarkable and will be discussed next in the lessons learned section. However, problems existed throughout the redesign process and can be addressed under the following headings:

- Employees While the idea of TQM was warmly embraced by the majority of the workforce, pockets of nay-sayers existed. Some exhibited the "wait-and-see" attitude, others the "show me" and still others were just reluctant to change (despite the emphasis on TQM training).
- First-level supervisors Somehow those closest to the workforce and most directly accountable to implement the TQM framework were left out of the training loop. It was assumed they all accepted the ideas and were fully competent to "make it happen." Jim Heitz added, "traditionally the most is demanded of this level and the least is given to this level to prepare." (7)
- Mid-level managers The fear of the unknown affected this group.

 not to mention the perception they were the first group to become expendable.

 Another problem this group experienced is illustrated in the article Employee Involvement, where it states, "Employee participation is stifled when supervisors and middle managers are not similarly rewarded for listening and implementing ideas." (3:49)
- Administration Since the focus of the redesign was on the maintenance processes, primarily the launch and recovery of aircraft, this extremely important group of people was left out of the initial redesign process. With regard to higher headquarters administration, the recommendation of the design team didn't follow any prescribed organizational diagram so the Air Force level administrators became a significant implementation roadblock.

- Turf battles Information sharing was initially difficult among work centers for fear if someone else found out what they really did. some other group would take it if it was good and eliminate it if it was bad.
- Implementation The commitment to implement the redesign in June 1991 could not be met. While this delay was somewhat out of the control of the maintenance leadership, the workforce generally felt it was a broken promise.

Most, if not all of these problems were either overcome or eliminated from being problems (public execution really works sometimes).

Instant winners

The most significant aspect of the redesigned organization was putting authority and responsibility at the lowest possible level and overlaying accountability across the whole structure from top to bottom.

Another significant aspect was the use of metrics which were critical to judge the effectiveness of the process. All maintenance metrics that were established at implementation in August of 1991 and measured one year later indicate efficiency gained was directed toward enhancing customer support. To mention but a few statistics, the mission support rate rose from 93 percent to 96 percent. the cycle time for brake overhauls was cut by 40 percent, productivity measured by completed jobs shot up 30 percent in the Jet Engine Intermediate Maintenance Shop (while losing 25 percent of its manpower), the repeat/recur discrepancy rate (a measurement of how well you fix a problem--especially on 30+ year old aircraft) dropped from 1 per 79 flights to 1 per 112. The list of maintenance metrics could go on. But suffice to say, from a maintainers

perspective these examples were individually significant and collectively, astounding.

The improvement in job satisfaction and quality and quantity of training available were noteworthy. The overall morale of the complex was measured at the highest it had ever been in the summer of 1992. This, despite the fact that the clouds of doom, once seen on the horizon, had arrived and begun to precipitate their change. Specifically, the wing was identified to move as part of the DoD base closure scenario, budget and manpower cuts had become a reality, and all of the potential adverse personnel actions were put into effect.

WHAT ARE THE LESSONS LEARNED?

There are a lot of ways to handle lessons learned, lists, analogies to other organizations, tips. The Patent and Trademark Office of the U.S. Department of Commerce provided a good structure to attempt to capture the lessons learned from the 4950th organizational redesign. In their briefing called "Teamwork", representatives of the Patent and Trademark Office identified a matrix to follow for getting everyone on board. It advocates preparation of management and employees through the tenets of focus, education and involvement. (4:1)

Focus

There are three absolutely critical questions which must be addressed before starting into any kind of TQM-influenced redesign:

- Why change?

- Where do you want to go?
- How are you going to get there? (4:2)

First, the change question. This must be unique to the organization. Perhaps there is an organizational element of DoD where desperation has taken hold. Hopefully, inspiration is still a motivator in others. The 4950th probably used a little of both these motivational techniques. People like General Mike Loh. Colonel (now Brigadier General) Bob Raggio and Jim Heitz definitely provided inspired leadership and went to great lengths to ensure the workers had a stake in the outcome. Undoubtedly, potential adverse employee actions and loss of workload played a role on the desperation side. But--the "why change" question was addressed and understood by all.

Where to go must be answered with a clear, simple vision. Teamwork was the 4950th's vision. Under that fell commitment to quality, involvement of all (including respect for the individual), and striving for continuous improvement through encouragement, extensive use of feedback, and visible reward for the heroes.

The strategy of any organization should also address the how to get there. The 4950th took a two-fold approach here. First, the culture change was begun with the massive education effort up-front, not to mention the continuous emphasis on training and education. Principles of listening to the customer, encouraging ownership and pride of that ownership, emphasizing measured risk taking and focusing on doing the "right things" were strictly adhered to.

Education

Education emphasis does not simply mean education in the principles of TQ. On the job skill training and education in management skills for a changing role are mandatory. As authors Joseph H. Boyett and Henry P. Conn point out. "All TQM efforts we've been involved in have several features in common. Yet, none are identical. They can't be. Each organization is unique and requires an approach to TQM tailored to its specific needs. We have even found that standard off-the-shelf quality training is usually ineffective unless customized to some extent to the organization." (2:11)

It was that customized aspect of the training the 4950th accomplished that made them so successful. The traditional trainers within the maintenance field were called upon to perform some of the initial training and to help develop follow-on courses to increase leadership skills. Later, interested individuals throughout the maintenance complex were invited in to become facilitators for this follow-on training. This approach provided several key benefits. It promoted teambuilding, it made problem-solving more realistic (the trainers related directly to the trainees) and it allowed flexibility for "just in time" training (the scheduling of the training and the level were both controlled and applied at the "right time").

Employee Involvement

The 4950th had a multi-faceted approach that was eminently successful. Decisionmaking was pushed down, close to the people who worked on the aircraft. Responsibility, authority, and recognition were kept together. Emphasis was placed on team recognition. The use of the employees as facilitators and trainers paid huge dividends.

The fundamental emphasis on people and how they are treated generated incredible payoff. That is reflected by the philosophical evolution from finding excuses for failure to finding ways to succeed. (4:15)

SO WHAT, BIG DEAL

"Not 'walking the talk' or living the values of quality is an easy trap to slip into.

A management team may not even know when they are falling into this trap."

(15:24)

DoD leadership is precariously near this trap--right now. While successes abound from the implementation of TQM values throughout the DoD in various organizational elements, backsliding has occurred despite focused senior DoD leadership vision and encouragement. Successes have happened because there are pockets of inspirational leadership in each of the services and agencies.

If DoD is to continue to improve its huge bureaucracy, make it more efficient, and streamline it to accomplish those yet to be determined missions, it cannot be caught in the "not walking the talk" trap. As Tom Salemme points out, "successful change involves both informal and formal systems within the organization. Major change can best be achieved by a series of planned management steps. Good decision structures are essential for change." (15:24)

It is time to stop reacting and start acting. DoD must follow the lead of those inspirational leaders and get on with TQM as the process of change. Specifically. DoD should establish the following:

- 1. A strong, take-charge advocate for TQM working directly for the Secretary of Defense, with mirror positions in each of the Service Secretariats.
- 2. A system to recognize and reward those inspirational leaders who have successfully changed the culture where they work. Draw them together to deliberate and recommend a roadmap for DoD. This should include answers to three questions, why change, where do you want to go and how are you going to get there?
 - 3. A timetable for getting on with it and a commitment to follow it!
- "If you have a major heart condition and need bypass surgery to survive, dieting and exercise are not the answer. First get the surgery, then start changing your lifestyle so you can avoid more heart surgery or worse in the future." (2:14)

 The dynamic changes in DoD have already caused the need for heart surgery.

 Hence, there is no better time to begin the lifestyle changes with TQM than right now!

BIBLIOGRAPHY

- 1. Bolman, Lee G., and Deal. Terrence E., <u>Reframing Organizations</u>, San Francisco: Jossey-Bass Publishers, 1991.
- 2. Boyett, Joseph H., and Conn, Henry P., "What's Wr y with Total Quality Management?", Tapping the Network Journal, 3(1). Spring 1992.
- 3. Breisch, Walter E., and Roger E., "Employee Involvement", Quality, 29(5), May 1990.
- 4. Brelsford, Theresa A., "Teamwork", U.S. Department of Commerce Patent and Trademark Office, Washington DC, November 1992.
- 5. Carlucci, Frank C., Secretary of Defense. "Department of Defense Posture on Quality." Letter. Washington DC, 30 August 1988.
- 6. Clark, Herbert J., "Total Quality Management: Getting Started", Brooks AFB, Texas, Human Resources Laboratory, August 1990.
- 7. Heitz, James R., "Interview", Wright-Patterson AFB, Ohio, 4950th Test Wing Maintenance Complex, December 1992.
- 8. Hill, Robert P., "Maintenance Redesign Outbrief", Wright-Patterson AFB, Ohio, 4950th Test Wing Maintenance Complex, January 1991.
- 9. Hofmann, Peter J., Capt, USAF, "The ESD Process Improvement Guide", Hanscom AFB, Massachusetts, Electronic Systems Division. August 1991.
- 10. Hunt, V. Daniel, Quality in America: How to Implement a Competitive Quality Program, Homewood: Business One Irwin, 1990.
- 11. Jacques, Elliott, and Clement, Stephen D, <u>Executive Leadership</u>, Arlington Virginia: Cason Hall & Co., 1991.
- 12. Juran, Joseph M., <u>Juran on Leadership for Quality: An Executive Handbook</u>, New York: The Free Press, 1989.
- 13. Loh, John M., Gen, USAF, "Achieving Quality Through Leadership", Office of the Secretary of the Air Force Policy Letter, Washington DC, November 1992.

- 14. Miller Consulting Group. "Design for Quality". The Miller Consulting Group. Atlanta. Georgia, 1990.
- 15. Salemme, Tom, "Lessons Learned About Managing the Change to TQM", Tapping the Network Journal, 2(3), Summer 1992.
- 16. Solis, Annabelle D., Maj, USAF, "A Strategy for Leading". Maxwell AFB. Alabama: Air Command and Staff College, April 1988.
- 17. Strines, Elizabeth, "Interview", Fort Leslie J. McNair, Washington DC, Industrial College of the Armed Forces, January 1993.
- 18. Stuelpnagel, Thomas R., "Total Quality Management". National Defense. 73(442). November 1988.